TVA's Mosquito Management Team

is responsible for monitoring mosquitoes in the Tennessee Valley that are a threat to the health of the human population. For additional information, call the team at 1-800-288-2483.

Mosquito larva monitoring

Please report illegal dumping or discharges in streams, ditches, catch basins, or streets to the City of Knoxville Water Quality Hotline at (865) 215-4147. Anonymous calls are welcome.

Other Contacts:

Knox County Health Department Mosquito Control (865) 215-5200

For other water quality concerns in the City of Knoxville, please call (865) 215-2148

Mosquitoes

IN THE TENNESSEE VALLEY

Bug zappers, citronella candles, purple martins, and "mosquito-repelling" plants - people will try almost anything to keep mosquitoes away. The trouble is that few of these remedies work. Mosquitoes are attracted to heat and carbon dioxide, not ultraviolet light used in bug zappers. Citronella candles don't contain enough repellent to make a difference. Purple martins eat larger insects, such as dragonflies, which are also enemies of mosquitoes. And plants sold as mosquito plants do not contain enough repellent to be effective.

Effective Personal Protection

To reduce mosquito bites, use repellents (the most effective ones contain DEET) and wear long-sleeved shirts and long pants. Mosquitoes are attracted to dark-colored clothing, so wear light-colored clothing when outdoors. Another way to reduce your chance of being bitten is to avoid wearing perfume, cologne, and hair spray when you know you will be spending time outdoors - they attract mosquitoes. To prevent mosquitoes from entering your house, check window and door screens and repair any holes, even the small ones.

Problem Mosquitoes

Of the 49 different species of mosquitoes that inhabit the Tennessee Valley, only 17 species cause most of the problems for humans. Most of these are nuisance mosquitoes; however, a few kinds do have the ability to transmit diseases.

One such mosquito is known as the malaria mosquito, *Auepheles quadrimaculatis*. Even though malaria has been eliminated from the Tennessee Valley, this mosquito is still present and not only is it an annoying biter, it carries the potential of transmitting malaria.

The Asian tiger mosquito, *Aedes alhopistus*, is a recent arrival in the Valley. It is small, black, and has silvery white spots on its legs and a narrow white stripe on its back between the wings. Now the most common "backyard" mosquito in the Tennessee Valley, it bites mainly in mid to late afternoon and lays its eggs in many types of containers. So far, the Asian tiger mosquito hasn't transmitted any diseases to humans in the United States, but scientists are keeping an eye on this species because it is capable of carrying several viruses, including dengue, an infectious tropical disease.

TVA, along with states and other agencies, actively monitor mosquito population levels which permits early detection of West Nile virus, St. Louis encephalitis, LaCrosse encephalitis, and other viruses that are capable of being transmitted to humans by 10 species of mosquitoes in the Valley. Additionally, surveillance of several mosquito species, with an ability to transmit diseases such as dog heartworm and eastern equine encephalitis to pets and livestock, is routinely performed.

Controlling Mosquitoes

Elimination of mosquito breeding habitat is the most cost-effective and environmentally sound method of controlling mosquitoes. The second most effective way is to kill them before they become adults, that is, in the aquatic larval stage. Adult mosquito control can be effective, but only for a short time as sprays dissipate quickly and new adults fly into the area.

When controlling mosquitoes in the larval stage, preventive measures should begin during the latter part of March or the first of April in the Tennessee Valley, and continue through fall as new generations emerge.

Mosquitoes that lay their eggs in tree holes, old tires, buckets, cans, etc., that hold water for at least eight days are called container mosquitoes. By eliminating breeding habitat you can help minimize potential problems that can occur with container species. If you have container mosquitoes:

- Scout your property for anything that might hold water, old tires, cans, pet water bowls, bird baths, etc., and discard, empty, or clean them about once a week.
- Turn unused pails, flower pots, wheelbarrows, etc., upside down so water will not collect in them; place covers on anything that cannot be turned over.
- Inspect and clean rain gutters and down spouts so water is not trapped in them for days at a time.
- Encourage your neighbors to examine their property for containers because mosquitoes from nearby areas can invade your property.

Mosquitoes whose eggs are laid on damp soil that will later be covered with water for short periods are called floodwater mosquitoes. If you have floodwater mosquitoes:

- Fill or drain low areas where water remains for 5 to 10 days after a heavy rain or flood.
- Apply a larvicide containing Bti (a biological agent) to water where mosquito larvae are present; be sure to follow label directions.

Use caution around wetlands. They are protected areas and often harbor endangered species and other valuable aquatic organisms. Check with proper authorities before applying control measures in wetlands.

Mosquitoes that lay their eggs in water standing for 3 weeks or longer are called permanent pool mosquitoes. If you have permanent pool mosquitoes:

- Apply a larvicide containing Bti to ponds where mosquito larvae are present; be sure to follow label directions.

MOSQUITO LIFE CYCLE

All mosquitoes go through four distinct stages in their development: egg, larva, pupa, and adult. Eggs, larvae and pupae require water for their survival.

Total time for a mosquito to develop from egg to adult is about 5-12 days, depending on species and water temperature. Adult females live an average of 21 days; some species may live up to 45 days. Adult males do not bite and usually live less than one week.

Centers for Disease Control miniature mosquito light trap uses dry ice to give off CO_2 which attract mosquitoes. The light brings them in closer so the traps fan can pull them in.